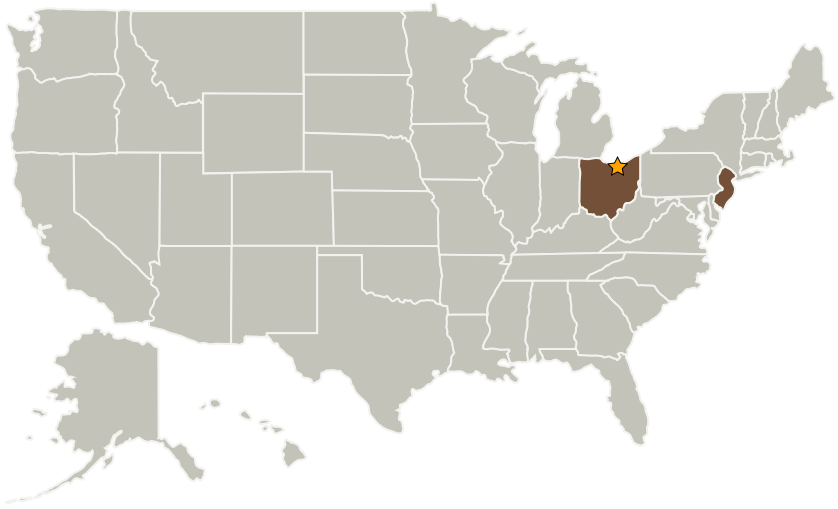
# Wireless System for Continuous Cardiopulmonary Monitoring in a Space Environment, Phase II

Completed Technology Project (2004 - 2006)

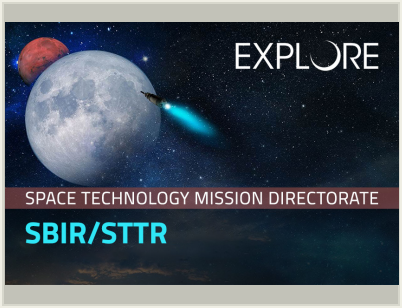
## Project Introduction

We propose to develop the NJM Sense-It system based on small sensor tags, which include a cardiopulmonary MEMS sensor for measuring heartbeat and breath rates continuously. In addition, the proposed sensor system can be operated in extended bandwidth mode to measure detail cardiopulmonary pattern upon control from the reader. The system operates using a central reader at 915 MHz with as many as 32 sensor tags. A single sensor worn as a Band Aid-like adhesive or strapped tag on the astronaut monitors cardiopulmonary activities. Additional sensors are worn depending on the detail of heart and lung sounds diagnosis data desired. This system has the advantage that tag sensors measuring many additional physiological functions can be added at later date. The extended bandwidth cardiopulmonary data can be displayed locally or telemetered to earth stations and reviewed by clinicians in any situation as desired.

## Primary U.S. Work Locations and Key Partners



| Organizations Performing Work | Role | Type | Location |
|---|---|---|---|
| ★Glenn Research Center(GRC) | Lead Organization | NASA Center | Cleveland, Ohio |
| New Jersey Microsystems, Inc | Supporting Organization | Industry | NEWARK, New Jersey |

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## Organizational Responsibility

**Responsible Mission Directorate:**

Space Technology Mission Directorate (STMD)

**Lead Center / Facility:**

Glenn Research Center (GRC)

**Responsible Program:**

Small Business Innovation Research/Small Business Tech Transfer

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| Primary U.S. Work Locations | |
|---|---|
| New Jersey | Ohio |

## Project Management

**Program Director:**

Jason L Kessler

**Program Manager:**

Carlos Torrez

## Technology Areas

**Primary:**

- TX06 Human Health, Life Support, and Habitation Systems
  - TX06.3 Human Health and Performance
    - TX06.3.4 Contact-less / Wearable Human Health and Performance Monitoring